



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/583,303

06/17/2006

Andreas Ritter

HM-717PCT

2509

40570 7590 08/11/2011
LUCAS & MERCANTI, LLP
475 Park Avenue South, 15th Floor
New York, NY 10016

EXAMINER

BATTULA, PRADEEP CHOUDARY

ART UNIT

PAPER NUMBER

3725

NOTIFICATION DATE

DELIVERY MODE

08/11/2011

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

INFO@LMIPLAW.COM

Office Action Summary	Application No. 10/583,303	Applicant(s) RITTER ET AL.	
	Examiner PRADEEP C. BATTULA	Art Unit 3725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 June 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 9 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2 and 3 is/are allowed.
- 6) ☒ Claim(s) 1,4,5 and 9 is/are rejected.
- 7) ☒ Claim(s) 6 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/15/11</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This action is in response to the reply filed on June 2, 2011

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4, 5, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawa et al. (Ogawa; U.S. 6,401,506) in view of Verbickas (U.S. 6,220,071) and Ginzburg (U.S. 6,158,260).

In regards to Claim 1, Ogawa discloses a method for the operation of the rolling stands of a tandem cold rolling mill (Figure 14, Items 24, 36, 28, 32), comprising a pair of work rolls 28, 32 (Column 42, Lines 62 – 65 & Column 43, Lines 55 – 57, Figure 14, Items 28, 32) and a pair of backup rolls 24, 36 (Column 42, Lines 62 - 65; Figure 14, Items 24, 36) in the case of four-high rolling stands and, in addition, a pair of intermediate rolls in the case of six-high rolling stands (Column 25, Lines 66 – 67 → Column 26, Lines 1 – 5 states that five high rolling mills, six high rolling mills or more are capable of being applied to the current invention), wherein at least the work rolls and the intermediate rolls interact with axial shifting devices (Column 32, Lines 66 – 67 → Column 33, Lines 1 – 19 discuss there are thrust counter-forces calculated in the axial direction; Column 28, Lines 55 – 63 shows that there is an element to apply them), comprising the combined use of the following technologies within the multiple-stand

Art Unit: 3725

tandem cold rolling mill: use of CVC/CVCplus technology with CVC roll contours of higher order, wherein each work roll or intermediate roll has a barrel lengthened by the amount of the shifting stroke (Column 35, Lines 21 – 35); use of pair-cross (PC) technology, wherein each work roll or intermediate roll can be swiveled parallel to the plane of the strip (Column 43, Lines 55 – 67 → Column 44, Lines 1 – 4).

Ogawa does not disclose use of strip edge-oriented shifting of the work rolls or intermediate rolls (10, 11), wherein each work roll or intermediate roll (10, 11) has a barrel which is lengthened by the amount of the shifting stroke and which has a cylindrical or cambered cross section, and the work rolls or intermediate rolls (10, 11) are each symmetrically shifted from the neutral shift position ($S_{zw} = a$ or $s_{aw} = 0$) by the same amount symmetrically to the center of the stand (Y-Y) in the direction of their axes of rotation (X-X). Ogawa further each work roll and intermediate roll has a barrel lengthened by the amount of the shifting stroke and each work roll and intermediate roll can be swiveled parallel to the plane of the strip.

Verbickas teaches of strip edge-oriented shifting of the work rolls or intermediate rolls wherein each intermediate roll (Column 4, Lines 37 – 39 discusses that multiple intermediate rolls, beyond two, are possible just as Ogawa states) wherein each intermediate roll has a barrel which is lengthened by the amount of the shifting stroke which has a cylindrical or cambered cross section (Column 4, Lines 41 – 47 discuss the geometry and that the multiple rollers will be completely cylindrical and others being semi-cylindrical due to double tapering. Column 4, Lines 52 – 67 → Column 5, Lines 1 – 9 discusses the movement with the rest of the specification discussing the operation;

Art Unit: 3725

Figure 3, Items 108, 110, 112, 114) and the work rolls or intermediate rolls are each symmetrically shifted from the neutral shift position by the same amount to the center of the stand in the direction of their axes of rotation (Column 4, Line 52 to the end of the specification discuss the elements bend and actuators initiate this bending. Such neutral and symmetric shifts can be possible considering the actuators pump an appropriate amount of fluid based on conditions. When the condition requires, this shifting is possible). Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide the amount of rollers as capable by Ogawa, as well as type and movement, as taught by Ogawa in order to provide strip edge relief (Column 3, Lines 66 – 67).

Ogawa modified by Verbickas does not disclose each work roll and intermediate roll has a barrel lengthened by the amount of the shifting stroke and each work roll and intermediate roll can be swiveled parallel to the plane of the strip.

Ginzburg teaches of a six high rolling stand with backup rolls, intermediate rolls and work rolls all shown to be capable of pair crossing (Column 5, Lines 9 – 14; Figure 11) which swivel parallel to the plane of the strip (Figure 11) and also having a force working upon all the rolls (Column 5, Lines 22 – 44; Figures 13 – 16). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide the rolls of Ogawa modified by Verbickas with the pair crossing as taught by Ginzburg in order to better obtain a desired thickness, profile, and flatness for a finished strip (Column 1, Lines 6 – 12).

Art Unit: 3725

With respect to each work roll and intermediate roll has a barrel lengthened by the amount of the shifting stroke and in case Applicant disagrees with Ogawa disclosing the axial shifting of the intermediate and work rolls, such is obvious with the prior art of Ogawa modified by Verbickas and Ginzburg. Ginzburg shows that movement and forces that are provided on one roll is at least capable on the work and intermediate rolls. It would have been obvious to a person having ordinary skill in the art to try and have axial shifting on each roll, and the barrel lengthening by the amount of shifting stroke since this would be one of the finite ways to obtain a desired thickness, profile and flatness for a finished strip with the teachings of Ginzburg where elements on one roll are provided on remaining rolls. Furthermore, these elements are just duplication of essential working parts and it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art.

In regards to Claims 4, Ogawa modified by Verbickas and Ogawa does not explicitly disclose wherein optimum utilization of the combination of technologies within the multiple-stand tandem cold rolling mill is realized by optimized shifting strategies as a function of the strip width. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to find the strategies optimal to the device for rolling and considering strip width is vital in rolling such a strategy would have been considered. Furthermore, choosing a strategy for optimization only requires a choice of a method and not the most optimal option.

In regards to Claims 5, please review the rejection of Claim 1 where the elements and at least one of the choices is presented. The claim language as presented by

Art Unit: 3725

Applicant, especially that of the "combination", requires that at least two of the listed bulleted elements on the following page to be present and not all.

In regards to Claim 9, Ogawa modified by Verbickas further discloses wherein the CVC/CVCplus technology, the technology of strip edge-oriented shifting, and PC technology are realized with only one geometrically identical set of rolls being a work roll or intermediate roll (The interpretation of the claim language states that only one set, which is considered by the Examiner as two rolls, are identical with the remaining 2 – 4 not being identical to one another. The rolls 24 and 36 of Ogawa, which would be unchanged with the modification by Verbickas, as being identical to one another. The collection of rolls is what makes any of the technologies possible. Further it is stated in the Ogawa rejection of Claim 1 that in the case of a six high rolling stand that 24 and 36 are intermediate rolls).

Allowable Subject Matter

Claim 2 remains allowable and Claim 3 is allowed for having the subject matter of Claim 1 incorporated as indicated in the previous Office Action.

Claim 6 still remains as an objected claim.

Response to Arguments

Applicant's arguments with respect to the pending have been considered but are moot in view of the new ground(s) of rejection. The rejection was supplemented with Ginzburg due to the amendments. Applicant has not provided specific arguments to the rejections or to the amendment to Claim 5 and not incorporating the previously allowed subject matter.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PRADEEP C. BATTULA whose telephone number is (571)272-2142. The examiner can normally be reached on Mon. - Thurs. 8:45-6:15 with alternating Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dana Ross can be reached on 571-272-4480. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3725

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/P. C. B./
Examiner, Art Unit 3725
August 8, 2011

/Dana Ross/
Supervisory Patent Examiner, Art
Unit 3725